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**SCHOOL OF ADVANCED AIRPOWER STUDIES**

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**FIFTH AIR FORCE LIGHT AND MEDIUM BOMBER**

**OPERATIONS DURING 1942 AND 1943:**

**BUILDING DOCTRINE AND FORCES THAT TRIUMPHED**

**IN THE BATTLE OF THE BISMARCK SEA**

**AND THE WEWAK RAID**

**By**

**Major Timothy D. Gann**

**AIR UNIVERSITY  
UNITED STATES AIR FORCE  
MAXWELL AIR FORCE BASE, ALABAMA**

## Report Documentation Page

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AND THE WEWAK RAID

TIMOTHY D. GANN, MAJOR, USAF

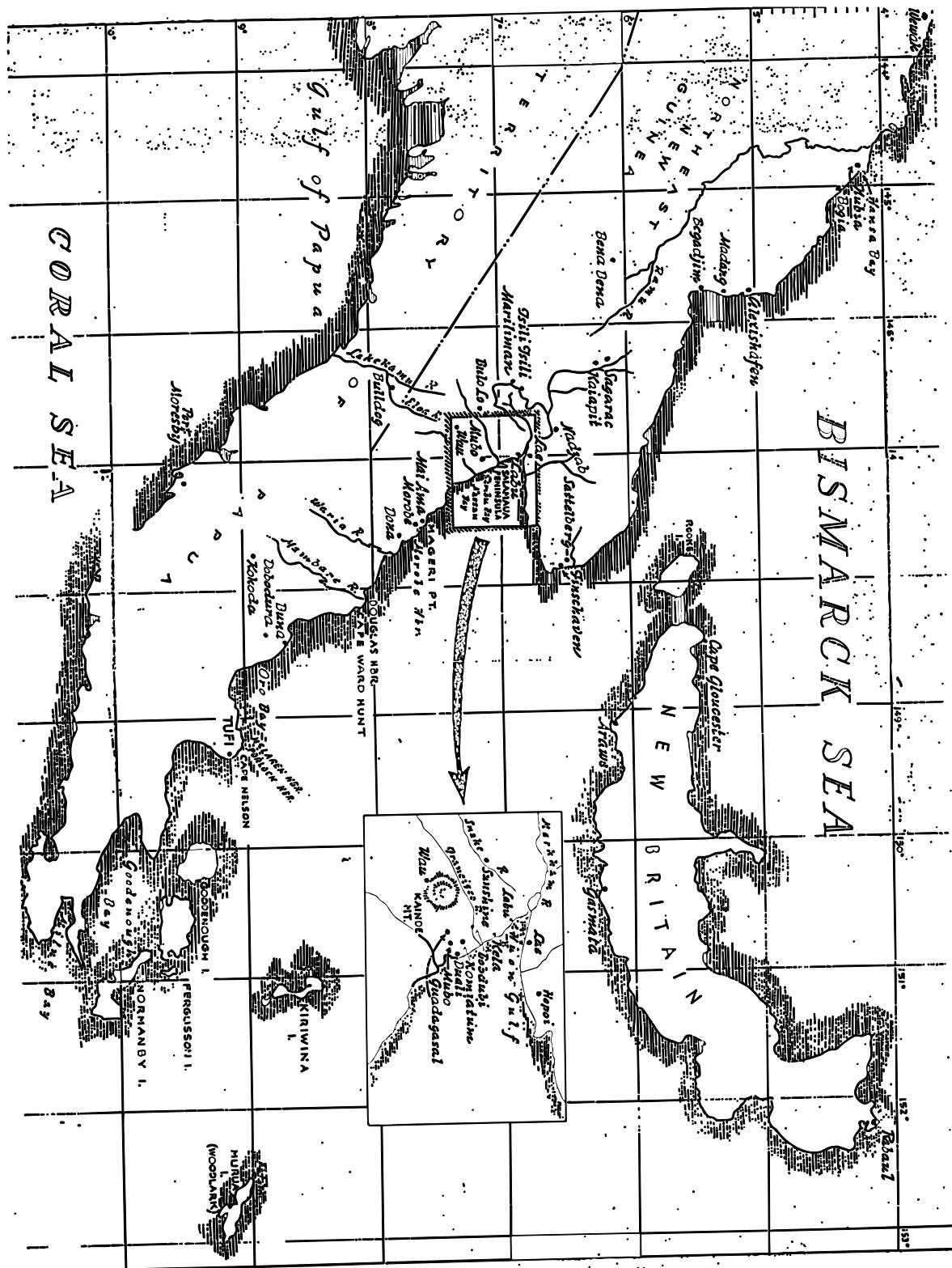
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## ABSTRACT

When Generals George C. Kenney and Ennis C. Whitehead became the two senior commanders of the US Fifth Air Force in July 1942 their work was cut out for them. The previous January, the Japanese secured the port of Rabaul in eastern New Britain. They immediately began the drive down the east coast of New Guinea with the objective of driving the Allies from Port Moresby. For the next year and a half, in some the harshest climate of World War II, the Fifth Air Force helped to reverse the tide and drive the Japanese from eastern New Guinea. This was accomplished despite the Europe-first policy and an inappropriate doctrine based on high altitude, daylight, precision bombing.

Kenney and Whitehead's first task was to modify existing aircraft and develop a suitable doctrine to interdict Japanese shipping between New Britain and New Guinea. In order to suppress ship-borne antiaircraft artillery, forward-firing machine guns were mounted in the nose of Douglas A-20 light bombers and North American B-25 medium bombers. Low altitude skip-bombing tactics were borrowed from the British and perfected by constant practice and refinement.

By February 1943, Allied intelligence, greatly aided by ULTRA intercepts, predicted the movement of a Japanese convoy destined for New Guinea. Kenney and Whitehead were determined to destroy the convoy with their recently modified commerce destroyer fleet and focused all their energies on doing so. A dress rehearsal featuring the Fifth Air Force light and medium bombers as the main striking force was conducted in the Port Moresby Harbor. On March 3rd after being hit twice by mass, coordinated attacks, the convoy was virtually wiped out in what became known as the Battle of the Bismarck Sea.

That same fleet of light and medium bombers also proved deadly against enemy airfields. Aircraft combat range was extended and modifications were made to the bomb bays to accept parachute fragmentation bombs. Airfield attack profiles were developed and once again, ULTRA provided a suitable target. In preparation for the anticipated Allied ground invasion of the Huon Peninsula, the Japanese moved the 4th Air Army to their four bases near Wewak. Beginning on August 17th, in a carefully- planned attack, Fifth Air Force bombers caught the enemy on the ground. By August 21st, nearly every aircraft at Wewak was destroyed. The subsequent Allied invasion was carried out virtually unopposed from the air.

Fifth Air Force light and medium bomber operations during 1942 and 1943 are textbook examples of doctrinal flexibility and extraordinary innovation. The unprecedented success of both the Battle of the Bismarck Sea and the Wewak Raid illustrate how airpower became the dominant force in the Southwest Pacific.

## LIST OF ABBREVIATIONS

A/A	Antiaircraft artillery
AAA	Antiaircraft artillery
AAF	Army Air Forces
ACTS	Air Corps Tactical School
AFB	Air Force Base
AIB	Allied Intelligence Bureau
APGC	Air Proving Ground Command
AU	Air University
AUL	Air University Library
CB	Central Bureau
HRA	Historical Research Agency
RAAF	Royal Australian Air Force
RAF	Royal Air Force
RAN	Royal Australian Navy
SWPA	Southwest Pacific Area
USA	United States Army
USAAF	United States Army Air Forces
USAF	United States Air Force
USN	United States Navy
USSBS	United States Strategic Bombing Survey

## BIOGRAPHY

Lieutenant Colonel Timothy D. Gann (BS, University of Southern California; MS, Embry-Riddle Aeronautical University) is a KC-IO pilot. A recent graduate of the inaugural class of the School of Advanced Airpower Studies, he was just assigned to the Doctrine Division, Headquarters USAF/XC, The Pentagon. Also a graduate of Air Command and Staff College, his previous assignment was Chief, Military History and Strategy Branch, Air Command and Staff College, Maxwell AFB, Alabama. Previous assignments included KC-10s at Seymour Johnson AFB, North Carolina, March AFB, California, and Barksdale AFB, Louisiana; and KC-135s at Seymour Johnson AFB.

## Introduction

When the New Britain port of Rabaul fell to the Japanese on January 23, 1942, it represented a “base which could serve as the key staging and supply center for their ambitious plan of encircling and dominating the Coral Sea.”<sup>1</sup> Their next task was to capture and control the two key land masses that crowned the Coral Sea--the Solomon Islands and New Guinea.

After retreating from the Philippine Islands to Port Moresby in southeastern New Guinea, the Allied Air Forces, and later, the US Fifth Air Force, US air component of the Southwest Pacific Area (SWPA), was thrust into the role of leading the fight against the Japanese. The challenge was immense. The Europe-first policy meant that few replacement aircraft, let alone additional combat groups, would be available for the foreseeable future. Those aircraft that survived early combat were badly in need of repair and in their present configuration, ill-suited for warfare in the SWPA. Perhaps as important, the USAAF's preferred doctrine of high altitude, daylight, precision bombing aimed at the industrial and economic structure of the enemy was of little use when the enemy's homeland was over 3500 miles away.

Warfare in the SWPA in 1942 and 1943 was much different than anywhere else in World War II. The combination of the harsh tropical climate and disease-infested jungles of New Guinea made overland transportation nearly impossible. Airfields and ground bases became precious fortresses. Their perimeters were heavily defended with numerous antiaircraft artillery (AAA) guns, but the surrounding territory was normally unoccupied. Foraging was sparse, making resupply from rear areas essential. The lack of air transportation capability and the great distances between Rabaul and bases along the eastern coast of New Guinea put a premium on sea lines of communications. The Japanese realized the importance of maintaining the flow of supplies and armed its vessels with AAA and used its superior Zero fighter to provide escort.

Given these challenges and the realization that he would have to carry out his mission with a minimum of forces, General Douglas MacArthur, Commander in Chief, SWPA, structured his concept of operations accordingly. Patterned after the unexpectedly rapid Japanese successes in the first four months of the war, MacArthur's campaigns were characterized by

the movement forward of air power by successive bounds in order to gain local air superiority, provide adequate cover for the advance of surface elements, and isolate each successive enemy position prior to the final assault by all arms.<sup>2</sup>

By the end of 1943, the Japanese were retreating from New Guinea's Huon Peninsula and were abandoning Rabaul. The ability of the Fifth Air Force to successfully accomplish its campaign by isolating the battlefield and destroying the Japanese air, ground, and sea forces was the key. Major General Charles A. Willoughby, SWPA G-2 affirmed this when he said,

[I]t was [the Fifth Air Force], which had systematically cut down reinforcements and supplies from Rabaul to Buna, that had finally allowed [Major General Robert C.] Eichelberger to crash through on the ground...There would be other tough engagements on the ground but from 1943 on MacArthur elaborated the system of bypassing the Japanese strong points and neutralizing them by pounding them by air after their communications from Japan had been slowed or cut.<sup>3</sup>

This decisive use of airpower was not achieved by thousand-plane heavy bomber raids. Instead, light and medium bombers flown in squadron-sized formations at minimum altitude became the main striking force. How was the Fifth Air Force able to succeed so quickly using aircraft and tactics deemed of secondary value elsewhere? The answer can be found by examining two air campaigns.

From March 3rd-5th, 1943, during the Battle of the Bismarck Sea, twelve ships containing the bulk of the Japanese 51st Division and its equipment were annihilated. Six months later, from August 17th-21st, over 200 aircraft, the bulk of the Japanese Fourth Air Army

at Wewak, were destroyed. This paper will elaborate on the contributions made by the Fifth Air Force light and medium bombers in those two monumental battles and what factors were most responsible for their success. But in order to put events in perspective, a brief prelude will review the air situation in the first nine months of the war. This will be followed by a look at the careers of the two airmen who led the way. The bulk of the paper will analyze the factors that directly contributed to the creation of the sea and airfield interdiction capability. The conclusion will note the significance of the achievements and suggest some relevance for the future.

## PART I

### Early Operations in the SWPA and Organization of the Air Units

Shortly after securing Rabaul, the Japanese Seventeenth Army established its headquarters and began its drive down New Guinea's Papuan Peninsula. On February 9, 1942, Gasmata, New Britain, and Lae and Salamaua were captured and became key forward bases. By June, the Headquarters of the Japanese Southeastern Fleet was also established at Rabaul which included the Eighth Fleet and the Eleventh Air Fleet. Naval aircraft initially assigned to its defense and to support ground operations in New Guinea included 60 Zero fighters, 60-80 Nell and Betty bombers and over twenty floatplanes and flying boats.<sup>4</sup> In July, the Japanese Army received an unplanned reinforcement. Those forces originally destined for Midway were rerouted to Rabaul with orders to increase the Seventeenth Army's pressure towards Port Moresby.<sup>5</sup> No time was wasted:

On 22 July Major General Tomitaro Horii landed some 4,400 troops at Gona, on the northeast coast of Papua. This force quickly occupied Buna; and by 28 July elements had penetrated inland to Kokoda, high in the Owen Stanley Mountains, where Australian resistance was met. Additional men and supplies poured in, and a base of operations was established in the Buna-Gona area. By 22 August over 11,000 troops had landed, and the drive on Port Moresby began.<sup>6</sup>

Allied aircraft attempted to counter the enemy landings by bombing the Japanese convoys from 25,000 feet. Despite meeting no air opposition, ten Boeing B-17 Flying Fortressess, five North American B-25 Mitchells, and six Martin B-26 Marauders could only hit one transport. One of the bombers and several fighters attempted low altitude strafing and bombing attacks, meeting with slightly more success but by the afternoon the troops were safely ashore.

By the time the Fifth Air Force was formally constituted on September 3, 1942 many of its men and aircraft had been fighting for as long as nine months.<sup>7</sup> After being badly mauled

during the initial Japanese attack on the Philippine Islands on December 8, 1941, American air units steadily retreated southward to northern Australia. By March, lead elements of the 3rd Bombardment Group (Light) began to arrive from the US and absorbed those light and medium bomber assets that had not perished during the bloody retreat.<sup>8</sup> By April, the 3rd Bomb Group was flying sorties against New Guinea targets from the most northerly Allied base at Port Moresby.

The Allied effort to save southeastern New Guinea was known as the Papuan Campaign. During the defensive phase, from July 21 to August 25, 1942, Fifth Air Force light and medium bombers concentrated on two types of missions: Modified Douglas A-20 Havocs strafed enemy troop and supply concentrations and B- 25s and B-26s attacked Japanese convoys attempting to resupply forces in New Guinea.<sup>9</sup> In an effort to cut-off the Japanese from their supplies, Fifth Air Force bombers attacked enemy shipping by staging through Port Moresby, a distance of 700 miles from their main operating bases in Townsville, Australia.<sup>10</sup> The results were pitiful. During the month of August, 19 hits were achieved by dropping 434 bombs resulting in a 4.4% probability of hit. Only one transport and one cargo ship was sunk. September was worse. Out of 425 bombs dropped, only nine ships were hit and only one cargo ship was sunk resulting in a dismal 2.1% probability of hit.<sup>11</sup>

Fighting on the ground was ferocious. Allied air support, though valuable at times, was often “spotty” and anything but decisive. But behind the scenes, the Fifth Air Force was steadily responding to the challenge. Units were being reorganized, outmoded tactics and aircraft discarded, and new and better ones developed.

As commander of the Fifth Air Force, General George C. Kenney and his headquarters were located in Brisbane, Australia. Since the bulk of his time was spent supervising his two organizations and providing MacArthur with air expertise, an intermediate organization to manage combat operations was necessary.

Accordingly, General [Ennis C.] Whitehead was made deputy air force commander and placed directly in charge at Port Moresby of Fifth Air Force, Advanced Echelon. ADVON, to use the abbreviated designation, had been conceived as a separate, small and highly mobile advanced headquarters, free of most administrative details and charged primarily with the immediate direction of combat operations.<sup>12</sup>

By September 30, 1942, there were one light and two medium bomb groups in the V Bomber Command, bomber component of the Fifth Air Force. The 22nd Bombardment Group (Medium) had 38 B-26Bs; the 38th Bombardment Group (Medium) had 63 B-25s; and the 3rd Bomb Group had 13 B-25s, 33 A-20As and 8 Douglas A-24 Dauntlesses which had already been pulled from combat.<sup>13</sup> Because of the priority given to operations in North Africa, no new groups would arrive until mid-March 1943.<sup>14</sup>

Beginning in November, the Allied ground forces shifted to the offensive climaxing in the defeat of the Japanese at Buna. Meanwhile, Fifth Air Force light and medium bombers continued to learn the tough lessons of war. Seeking to implement new counter air techniques, airfield attacks using parachute fragmentation (parafrag) bombs were becoming "highly successful."<sup>15</sup> Strikes against enemy convoys also showed improvement, though the Japanese continued to supply their troops. The Fifth Air Force had come a long way in its first five months. Kenney summed it up best when he said, "we learned a lot and the next one will be better."<sup>16</sup>

### The Earlier Careers of the Two Airmen at the Top

Kenney arrived in Brisbane on July 28, 1942 and met with MacArthur the next day.<sup>17</sup>

Having established an excellent working relationship with the Commander in Chief, Kenney immediately set out to energize the badly depressed air forces. During the preceding 25 years, his blend of operational, educational, and command experiences prepared him well for the challenges ahead.

Prior to World War I, Kenney attended the Massachusetts Institute of Technology and worked as an engineer, eventually heading a small engineering corporation.<sup>18</sup> In 1917, he enlisted in the US Army. After completing flight training he was sent to Issoudun, France where he flew 75 missions in the Great War. In these combat sorties Kenney whet his appetite for what was later coined “attack aviation.”

In France Kenney met Brig. Gen. William “Billy” Mitchell. According to Kenney, Mitchell directed him to fly “special missions.” These were flights to find American troops, sometimes in large numbers, that had become lost...Kenney and his cohorts would fly at almost treetop level, looking for American uniforms. From that experience, according to Kenney, the idea of “attack aviation” came to him. It was safer to fly at low altitude where aircraft were less exposed to ground fire.<sup>19</sup>

After the war, unlike many officers who continued to hone their flying skills, Kenney “concentrated on aeronautical development and its application to warfare.”<sup>20</sup> In 1921, he graduated from the Air Service Engineering School and finished first in his class. Next, he was assigned to the Curtiss factory where he tested aircraft and became the Air Service representative.<sup>21</sup> Returning to McCook Field, Ohio in 1923, Kenney reported to the Engineering Division where once again he demonstrated a knack for innovation.<sup>22</sup>

Energetic and restless as ever, he conceived the idea of mounting [machine guns] on a plane's wings instead of on the engine cowling where they had to be synchronized to fire, at a much slower rate, through the propeller arc. He demonstrated its feasibility by attaching two .30-caliber [machine guns] to the

wings of a considerably modified DH-4. It was an idea ahead of its time, a significant though rejected breakthrough in the development of aircraft armament.<sup>23</sup>

In 1926, Kenney graduated from the Air Corps Tactical School (ACTS) at Langley Field, Virginia, and returned a year later as an instructor in the attack section.<sup>24</sup> He put his time to good use at the ACTS. Seeking a way to enhance the capability of the low-level aircraft, he helped develop the parafrag bomb.<sup>25</sup> Kenney was truly an attack aviation enthusiast and presided over its zenith at the ACTS. In an interview many years later he reminisced of his days at Langley:

Well the thing that I was interested in more than anything else was attack. I taught attack aviation there (ACTS) and wrote the textbook on it and developed the tactics by using the class as tools to build the tactics at low altitude work.<sup>26</sup>

When Kenney departed the ACTS, attack aviation slowly declined in importance; due partly to his absence and partly to the school's growing emphasis on bombardment.<sup>27</sup> In 1938, he became the Chief, Production Engineering Section at the Air Corps Materiel Division where he gained the reputation of a "trouble shooter."<sup>28</sup> During this and previous tours at McCook Field, Kenney developed his appreciation for the other side of combat airpower--supply, aircraft maintenance, and modification. He left there an "ardent advocate of air power and of expanded funding for military research and development."<sup>29</sup>

As the German war machine rolled through France, Kenney was sent to Paris as the Assistant Attaché for Air. Observing the Luftwaffe's rapid successes, he made numerous recommendations for improvements in US aircraft.<sup>30</sup> Kenney left Europe convinced "the U.S. Army Air Corps was markedly inferior to the major European air forces in quantity and quality of planes and personnel."<sup>31</sup>

Whitehead arrived in Brisbane on July 11, 1942, met with MacArthur and was warmly received.<sup>32</sup> A little over two weeks later, Whitehead was named Deputy Commander, Fifth Air

Force. Like Kenney, Whitehead came to the SWPA with talents and experiences that served him and his future combat crews well.

Whitehead also enlisted in the US Army during World War I. After flight training he too was sent to Issoudun, France where he served as an instructor and test pilot.<sup>33</sup> When the war ended, he returned to college and graduated from Kansas University with a Bachelor of Arts degree in Journalism.<sup>34</sup> Yearning to return to flying, he reentered the service in 1920 and flew fighters in the 94th Pursuit Squadron.<sup>35</sup>

In 1921, his unit deployed to Langley Field to participate in bombing tests of the *Ostfriesland* under the supervision of Billy Mitchell.<sup>36</sup> Whitehead's formation of fighters was the first to attack the German battleship giving him the opportunity to witness first-hand the vulnerability of a surface vessel to a well-planned aerial attack. In 1926, Whitehead graduated from the Air Service Engineering School and, like his future boss, graduated first in his class.<sup>37</sup> After attending the ACTS in 1930, he completed several tours in fighters and reported to the War Department General Staff in the Military Intelligence Division (G-2). Two years later he became G-2's first chief of the Aviation Section.<sup>38</sup> This tour in intelligence was particularly beneficial to him and the Fifth Air Force.

The assignment in Washington was perhaps one of the most important ones that Ennis Whitehead ever had, not for the contacts he made, although the contacts were important, but for the knowledge which he obtained on the use of air power by the Germans and British during the Blitzkrieg days...Through his job with G-2, Whitehead learned quickly the flexibility and mobility of air power.<sup>39</sup>

While at G-2, Whitehead was able to expand his concept of airpower. One of his conclusions was “that [airpower] could be used for other things beside [strategic] bombing, among them: mine laying, carrying of troops, and interdiction of the battlefield.”<sup>40</sup>

MacArthur found two airmen who were eminently qualified to direct the SWPA's air

campaign. Both were veterans of World War I and excelled in engineering. Though they were vocal advocates of airpower and had enjoyed personal contact with Billy Mitchell, neither had become strategic bombing zealots. While Kenney was in Europe watching the start of World War II, Whitehead was in Washington building an air intelligence framework. Kenney was the attack man, Whitehead knew fighters. Their experience and pragmatic attitudes became essential ingredients in the Fifth Air Force's recipe for success. Perhaps most important, in a theater where the size of egos was legendary, the two men worked well as a team.

Kenney had great confidence in Whitehead...He would forward general operational directives from Brisbane, allowing his subordinate great flexibility in carrying out the assigned mission. The two men communicated with each other practically on a daily basis to work out operational details. They would maintain a strong, close personal and professional relationship throughout the war.<sup>41</sup>

Their work was cut out for them. In order to get the air war on track they had to find some aircraft that could take the fight to the Japanese.

### Enhancing the Air Fleet

In August 1942, the 3rd Bomb Group's 89th Bombardment Squadron received their shipment of A-20As from Savannah, Georgia. These A-20s were normally configured with four fixed, forward-firing .30-caliber machine guns mounted against the fuselage and three flexible guns in the rear gunner section.<sup>42</sup> Unfortunately, the squadron's guns did not make the shipment. To add to their frustration, with a combat range of only 525 miles, the A-20s lacked the reach to strike most Japanese targets. In its present state, the 89th wasn't going to see any fighting in the near future. Knowing that replacements were not on the horizon, the mechanics of the 3rd Bomb Group under the supervision of Major Paul I. (Pappy) Gunn, went to work modifying their A-20s.

To increase the range, two 450-gallon fuel tanks were installed in the forward bomb bay.<sup>43</sup> The resultant loss of bomb load was offset by inserting four .50-caliber fixed, forward-firing machine guns in the nose in place of the bombardier station.<sup>44</sup> This package installation was a design masterpiece and was eventually adopted throughout the Pacific, European, and China-Burma-India Theaters. When combined with the remaining four fixed, .30-caliber fuselage guns, the A-20A became a potent strafing weapon.

Prior to departing for Australia, Kenney discovered 3000 parafrag bombs stored in war reserve and requested their transfer to the SWPA. These were the same bombs he began developing in 1928. A parachute was attached to a 23-pound bomb and given a supersensitive instantaneous fuze. The parachute stopped the forward momentum of the bomb and gave the low-flying attack aircraft a chance to depart the fragmentation pattern.<sup>45</sup> Upon detonation, the bomb burst into between 800 and 1200 pieces. It was designed to strike airplanes, small open boats, searchlights, trucks, artillery tractors, mechanized forces, personnel and animals--perfect for the jungle targets of New Guinea.<sup>46</sup>

When the parafrags arrived in late August, Pappy Gunn once again supervised the modification effort. A honeycomb rack was fastened to the A-20's rear bomb bay which allowed 40 or more bombs to be carried.<sup>47</sup> After considerable flight testing the new platform was ready for combat trials.

An experiment using parachute bombs was tried in a carefully coordinated attack on Buna. On 12 September 1942, seven B-17's swept in through rain squalls and heavy antiaircraft fire to drop 300-pound demolition bombs from 3,000 feet on the airdrome. These were followed by additional demolition bombs dropped by five B-26's from 5,000 feet. Finally, and under a cover provided by [Bell] P-400's, A-20s roared over the target area at 70 feet pouring .30- and .50-caliber bullets into parked enemy planes and loosing over 300 x 23- pound parachute bombs. In spite of poor visibility, all antiaircraft fire was silenced, and the A-20 group commander claimed 17 Zeros destroyed on the ground...This was the first reported use of parachute bombs in the Southwest Pacific.<sup>48</sup>

Another unit in the 3rd Bomb Group, the 90th Bombardment Squadron, received B-25Cs originally destined for Dutch airmen in the Netherlands East Indies. The B-25s were armed with two .50-caliber guns in the upper turret, two more in a retractable belly turret and a single flexible .30-caliber gun in the nose.<sup>49</sup> After the show put on by the A-20s, Kenney directed Pappy Gunn to go to work on the B-25s. His original request was formidable:

I sent word to...pull the bombardier and everything else out of the nose of a B-25 medium bomber and fill it full of fifty-caliber guns, with 500 rounds of ammunition per gun. I told him I wanted him then to strap some more on the sides of the fuselage, and three underneath.<sup>50</sup>

After experimentation, the three guns underneath the nose were deemed impractical. However, four .50-caliber machine guns in vertical pairs were attached to the side of the fuselage and a package installation similar to the A-20 was inserted in the nose. Since the B-25s would be flown at low altitude, the tail and belly turrets were removed.<sup>51</sup> When the upper turret was turned forward, the newly designated B-25C-Is could concentrate ten .50-caliber guns on the target.

These modifications were the first step in transforming the Fifth Air Force light and medium bombers into potent killers. Bypassing the normal USAAF bureaucracy and often conducting tests in combat, the aircraft were ready in weeks instead of months or years. The next step was to train the crews and develop the tactics.

#### The Evolution of Skip-Bombing

Reflecting their interwar doctrine, early USAAF units used conventional bombing tactics against enemy shipping. Plans called for, “flights of sufficient size to assure a pattern of bombing large enough to cover any possible move of the target in the interval between release and impact of the bomb.”<sup>52</sup> Typical high altitude attacks were flown at 20,000 feet to avoid the

effective range of enemy AAA. With a constant shortage of bombers and escort fighters, the results were often poor. A tactical study prepared by the USAAF Headquarters determined “it was apparent that the answer still had not been found to the problem of successfully bombing floating targets, particularly fleeting or maneuvering targets, with a small force of bombers and fighters.”<sup>53</sup>

The Fifth Air Force eventually found the answer in skip-bombing. Though they can deservedly take credit for skip-bombing's first decisive use, the concept did not originate in the SWPA. Earlier in the war, the RAF used this technique to attack German shipping. On September 4, 1939, 15 Bristol Blenheim bombers assaulted enemy vessels near the entrance to Wilhelmshaven. “The Blenheims attacked the pocket-battleship Admiral Scheer in the Schillig Roads with great gallantry at low level, hitting the ship four times.”<sup>54</sup>

In April 1941, General H.H. Arnold visited Great Britain to observe and discuss the war. During a dinner hosted by Prime Minister Winston Churchill, several senior British officers discussed the merits of skip-bombing. Arnold recalled in his memoirs, “I learned about skip-bombing that night... The British claimed to have had wonderful success with that method and to have made far more hits than with high altitude bombing.”<sup>55</sup> When Arnold returned to Washington, he directed the Air Proving Ground Command (APGC) at Eglin Field, Florida to carry out further tests.<sup>56</sup>

The test report was formally completed on December 7, 1942. Its objective was to “determine the practicability of effectively attacking water-borne surface vessels from minimum altitudes with demolition bombs,”<sup>57</sup> and to “develop tactics and techniques for accomplishing such attacks.”<sup>58</sup> The report fully endorsed the concept and recommended that “training of pilots

in these techniques be initiated at the earliest possible moment.”<sup>59</sup> Two methods of attack were deemed highly effective:

- (1) Quartering front attack on armored surface vessels (more than one (1) inch of side armor plate) at maximum level flight speed and one hundred-fifty (150) feet to three-hundred (300) feet altitude, dropping one-thousand (1,000) pound or two-thousand (2,000) pound demolition bombs...
- (2) Broadside attack on unarmored or lightly armored surface vessels (less than one (1) inch of side armor plate) at maximum level flight speed and at the minimum altitude necessary to clear the target, dropping demolition bombs of any appropriate size...<sup>60</sup>

In July 1942, during the long flight from the US to Australia, Kenney, who was already aware of the Fifth Air Force's poor bombing record, pondered a means to improve their accuracy. With a long-held belief in the value of low altitude attacks, he and his aide, Major William Benn, discussed the practicality of skip-bombing. During a stop in Nandi in the Fiji Islands, they decided to conduct an impromptu test:

It looked as though there might be something in dropping a bomb, with a five-second-delay fuze, from level flight at an altitude of about fifty feet and a few hundred feet away from a vessel, with the idea of having the bomb skip along the water until it bumped into the side of the ship...The more we talked about the scheme, the more enthusiastic we got, so finally we borrowed a B-26 from the boys at Nandi, loaded on some dummy bombs, and tried the idea out against some coral knobs just offshore.<sup>61</sup>

Thus, when Kenney and Benn arrived in Australia skip-bombing became a priority. Shortly after getting acclimated to his new position, Kenney “fired” his aide and appointed Benn commander of the 63rd Bombardment Squadron, a B-17 unit in the 43rd Bombardment Group (Heavy). In October 1942, Benn initiated skip-bombing tests using his squadron's B-17s. He quickly achieved success:

It was already accepted that their first problem would be to find the correct altitude and air speed for the release of the bomb in order that it hit into the side of the target. The target chosen was a small sand bar surrounded by shallow water. This was selected for the initial runs instead of the wrecked ship at Port Moresby

in order that they could observe the skip of the bomb, and check the distance and height...After this preparation, it was decided to make test runs on the wrecked ship...The second bomb was a direct hit.<sup>62</sup>

However, Benn's enthusiasm for skip-bombing was tempered by his understanding of the heavy bomber's limitations. In the after-action notes of the trials, the commander of the 43rd Bomb Group cautioned:

Skip bombing with heavy bombardment aircraft must be considered an attack of opportunity. An attempt to skip-bomb a war vessel in the daylight, unsupported, would be hazardous, because of lack of speed, maneuverability, and small amount of forward fire. Successful daylight attacks have been made on unescorted merchant vessels by heavy bombers. Repeated skip bombing attacks in the same area would result in some form of protection to defeat it...<sup>63</sup>

Fortunately, by now the Fifth Air Force had two types of aircraft that exceeded the B-17 in speed, maneuverability, and forward firepower--the modified A-20As and the B-25C-1s. During December, 90th Bomb Squadron crews skip-bombed the Moresby Wreck with their B-25C-1s.

Once the B-25 crews became comfortable with the basic concept they made one key refinement. To eliminate the need to calculate the ricochet distance, they timed their release to hit the side of the ships, instead of bouncing short. This method was coined "masthead height" bombing. "The runs on the wreck allowed [the B-25 crews] to pick out a reference point on the nose of the airplane to use as a bomb sight, and gave them experience in low level turns and confidence in their ability to hit a ship."<sup>64</sup> After sufficient practice, the V Bomber Command was so confident of the new masthead technique that they proclaimed, "A well trained pilot should hit a ship nearly every time using the [masthead technique]."<sup>65</sup>

Because masthead height bombing required the aircraft to fly immediately over the target, determining the correct fuzing delay was critical. Fortunately, as part of the skip-bombing tests, the APGC also looked at special fuzes. The report stated:

A tail fuze...burning in air to produce a minimum of delay of four (4) seconds, will provide a probable minimum safety margin of approximately seven-hundred (700) feet from the detonation of ricochetting one-hundred (100) pound and five-hundred (500) pound aerial bombs.<sup>66</sup>

The APGC specifically approved the use of the M106 type fuze.<sup>67</sup> After some further experimentation, the Fifth Air Force used the M106 paired with an Australian detonator set for a five-second delay.<sup>68</sup> Tests using this configuration went reasonably well but not without some difficulties:

One plane was badly damaged and made a forced landing on a reef as a result of an instantaneous detonation; another bomb hit the wreck and the bomb exploded almost instantaneously inside the wreck and splattered the belly of the B-25C-1 with rust and small fragments but did no other damage.<sup>69</sup>

The final evolution in the newly christened “commerce destroyer” fleet was to develop a tactic to ensure the B-25s could get close enough to the target vessel to release the bomb without getting sprayed by AAA. On initial attempts against Japanese shipping, many aircraft had returned “badly shot up from enemy light- and medium-caliber ship-borne antiaircraft fire.”<sup>70</sup> Ten forward-firing .50-caliber guns would silence most enemy AAA but twenty even sounded better. Once again, a suitable tactic was created:

B-25 crews were trained to attack in pairs simultaneously. One plane strafed the vessel from stern to stem and from stem to stern, while the other strafed the vessel as it came in on its beam and bombed it. As the result of prolonged practice, pairs of B-25's learned to attack a vessel at a gliding speed of 250 to 275 m.p.h., and knew the fire power of one B-25 would be raking the side of the vessel during the split second that the other strafed and bombed the beam.<sup>71</sup>

The next step for the Fifth Air Force was to find a Japanese convoy and destroy it in a decisive engagement before the enemy developed countermeasures.

### Locating the Convoy

At the conclusion of the Papuan Campaign, Fifth Air Force planners probed their intelligence sources to find one of the periodic Japanese resupply convoys between Rabaul and New Guinea. By early 1943, the Allied intelligence capability under the centralized direction of Headquarters, SWPA was substantial. Organized shortly after MacArthur's arrival in May, 1942, it included:

- (1) Allied Translator and Interpreter Section (ATIS) which trained, organized, and sent into the field linguist detachments to interrogate prisoners of war and translate captured documents;
- (2) Allied Intelligence Bureau (AIB) which conducted clandestine operations, sabotage, and espionage behind the enemy lines and in enemy-held territories;...
- (3) Allied Geographical Section (AGS) which gathered and published geographical information on areas within the SWPA;...
- (4) Central Bureau (CB) which was an inter-Allied cryptanalytical service, co-ordinated with British and United States establishments.<sup>72</sup>

These organizations and their parent unit, SWPA G-2 were busy during the first two months of 1943 trying to determine when the Japanese would reinforce their beleaguered units at Lae and Salamaua. In early February, Fifth Air Force reconnaissance coverage intensified and evidence of an upcoming operation began to mount:

At Lae in the first five days of February allied reconnaissance revealed increased ground and renewed air activity, the repair of the runway, and construction of the blast bays. The air activity suggested the importation of supplies while the repair work was recognized as a characteristic enemy effort to recondition the airdrome for fighter airplanes assigned to protect an expected convoy bringing further reinforcements.<sup>73</sup>

Reconnaissance flights continued and on February 7th a Japanese floatplane was sighted near Gasmata. The enemy typically forward-deployed floatplanes for use as antisubmarine patrol for their shipping.<sup>74</sup> During the next week, increased Japanese air and submarine activity in the vicinity of Lae furthered Allied suspicions.<sup>75</sup>

Reconnaissance aircraft also monitored Japanese shipping levels in Rabaul. During December 1942 and the first half of January 1943 approximately 65 merchant ships totalling 200,000 tons were observed. In the last week of January, the number dipped to less than 45 totalling approximately 170,000 tons. However, beginning on February 12th, and lasting throughout the month, the number soared to almost 80 ships in excess of 250,000 tons.<sup>76</sup>

By the third week in February, G-2 saw enough and in their daily summary made the following prediction: “Merchant shipping at Rabaul has reached a new high...In view of the comparative inactivity in the Solomons, this increase over the normal assumes serious aspects, in relation to possible employment against New Guinea.”<sup>77</sup>

In addition to scouting reports, G-2 also tapped its highly valuable signals intelligence sources. Receiving raw decrypts and intercepts from SWPA CB, US Navy, and Allied agencies in Australia, MacArthur's intelligence personnel integrated this data with aerial reconnaissance and provided remarkably accurate predictions.<sup>78</sup> On February 19th, the US Navy cryptanalysis unit based in Melbourne, Australia presented MacArthur with ULTRA traffic that confidently stated “the Japanese planned to land at Lae in early March.”<sup>79</sup> This unbelievable and timely breakthrough was achieved by the kind of interservice cooperation rarely noted in historical accounts of the Pacific War:

Since February 8, navy cryptanalysts in Washington had labored to decipher an intercepted Japanese naval message. Eight days later, despite difficulties in translation, the broken message revealed that the convoy scheduled to RZM--the Japanese designation for Lae--had to be changed to add more destroyer transports. Seventeen hours later, a better translation clarified Japanese plans to dispatch three separate convoys, one each to land at Madang, Wewak, and Lae. The CINCPAC (Commander in Chief, Pacific) Intelligence Bulletin for February 19 reported the forthcoming simultaneous reinforcement and noted that the 20th and 41st divisions would be taken to Madang and Wewak in transports while transports and destroyers would carry troops to Lae.<sup>80</sup>

Allied air planners now knew where the convoys were coming from, their approximate size, and departure and arrival dates. But one key piece of information was still missing. Would the convoys depart from Rabaul as a unit and split up enroute or would they take separate routes? To cover all possibilities, Whitehead's men considered three possibilities: The entire convoy could land at Madang/Wewak; it could split up with half going to Madang/Wewak and half to Lae; or the entire convoy could land at Lae. To cover each contingency, planners devised the following strategy: If the entire convoy landed at Madang, the strike would consist of only heavy bombers since light and medium bombers lacked sufficient range. If the convoy split, heavy bombers would attack the ships heading for Madang and light and medium bombers would strike the remainder after passing through the Vitiaz/Dampier Straits. Finally if the entire convoy was headed to Lae, a coordinated attack using light, medium, and heavy bombers would strike it once within the light bomber's range.<sup>81</sup>

Allied reconnaissance flights were stepped up to determine which route the convoy would take (i.e., north or south of New Britain) and the destination.<sup>82</sup> Once again, these flights gave Allied planners valuable clues:

In the last few days before February 27 there was obtained more evidence throughout the coastal area from Lae to Wewak of systematic developments and the imminence of substantial reinforcements by convoy. In addition, landing barges were seen to approach Salamaua and more submarine traffic was noted at Lae.<sup>83</sup>

Allied weather forecasters predicted heavy cloud cover in the area north of New Britain and clear weather in the south for the first several days of March. From this information Kenney and Whitehead deduced that the Japanese would choose the northern route to stay underneath the cloud deck.<sup>84</sup> At about the same time, Navy cryptanalysis provided even further clarification:

Washington needed three days to decrypt a February 21 Eleventh Air Fleet message that pinpointed a six-ship convoy destined to land the 51st Division about March 5.<sup>85</sup>

The final piece of the puzzle was in place. Combining hard evidence with sound judgment and intuition, the Fifth Air Force finally found a suitable target for their commerce destroyer fleet. In combat, such an opportunity comes rarely. Kenney and Whitehead were determined to make the most of it.

#### The Development of the Attack Plan and Dress Rehearsal

With the advantage of surprise, Kenney and Whitehead decided to hit the Japanese convoy with a mass, coordinated attack. The A-20s, even with their increased range, had the shortest “legs.” Thus, a point within their combat radius, just off Finschaven inside the Vitiaz/Dampier Straits was selected as the target area. Heavy bombers would track and harass the convoy until it cleared the straits and then the entire force would strangle it.<sup>86</sup>

The Papuan Campaign and the rigors of flying in the SWPA had taken its toll on the Allied Air Force aircraft. On March 1st, the Fifth Air Force was down to only one light and one understrength medium bomb group available for action. The 3rd Bomb Group had 17 B-25s and 15 A-20s and the 38th Bomb Group had 11 B-25s immediately ready. The 22nd Bomb Group and its B-26s were so badly shot up they had been sent back to Australia for rest and recuperation. The Royal Australian Air Force (RAAF) 9th Group had an additional six A-20s (Bostons) and 13 Bristol Beaufighters available.<sup>87</sup> With so few aircraft, Whitehead stood down the light and medium bombers to “conserve their strength.”<sup>88</sup> The units could afford to rest because they had already demonstrated proficiency in the new skip-bombing concept during previous crew familiarization flights. “The pilots trained for six weeks before the Bismarck Sea

Convoy engagement and each pilot dropped thirty to forty bombs (one bomb to a run) on the Moresby Wreck.”<sup>89</sup>

Attacks against an unarmed, stationary hulk only proved the crews could physically hit the target. In order to inflict enough damage to the convoy to prevent it from landing men and supplies ashore, the Fifth Air Force needed a plan that would deliver an unprecedented degree of concentrated, coordinated firepower. Such an attack plan required precision both in planning and execution because every available aircraft would play an essential role.

Mass, coordinated attacks were not invented in the SWPA. A member of Kenney's staff, RAAF Group Captain Bill Garing, had participated in coordinated attacks while piloting Short Sunderland flying boats in the European Theater.<sup>90</sup> Furthermore, when skip-bombing was being tested at Eglin,

[t]he men who supervised the tests and who evaluated the results had the vision to foresee how this [skip-bombing] could be part of a broader technique, one which would employ low-level attacks as the power punch of mass coordinated attacks...<sup>91</sup>

Regardless of the payoff, the plan was risky. As previously mentioned, the range of the light bombers would determine the location of the “kill box.” Unfortunately, that point was uncomfortably close to the convoy's final destination and afforded little room for error. Furthermore, a mass, coordinated attack was by-definition complex. Once the convoy was pinpointed, Fifth Air Force planners had to predict its exact time of arrival at the attack location. Next, the light and medium bombers would have to launch and affect a rendezvous with the participating heavy bombers and friendly fighters. Once assembled, the entire group would proceed to the convoy's projected location. After sighting the convoy, they had to readjust the formation to properly align the attack elements and commence the attack. All this would have to

be accomplished while avoiding hostile fighters and AAA as well as the danger of a midair collision. During the attack, to avoid fratricide or duplication of effort, sequencing was particularly critical. In order to minimize the chance for errors, Whitehead decided to conduct two rehearsals. The first was scheduled for February 28th, and the second, March 3rd.<sup>92</sup>

On the first rehearsal, an attacking force of 3 B-17's (representing 3 flights), 4 Beaufighters, 4 B-25's, 4 B-25C-1's and 3 A-20's escorted by 8 [Lockheed] P-38's bombed the Moresby Wreck in a coordinated attack which went off smoothly. Eight [Bell] P-39's represented the opposition. Nearly all squadron leaders and many flight leaders participated and discussed tactics among themselves and with their squadrons before and after the -attack.<sup>93</sup>

Thus far only the A-20s and B-25C-1s had received the nosegun modifications that would suppress the AAA during the masthead height attacks. During the rehearsal, the Beaufighter and unmodified B-25 crews combined their individual capabilities to give the B-25s protection during the final low altitude runs. The Beaufighters, firing their four 20mm cannons and six 30-caliber machine guns cleared a path. Immediately behind and slightly above roared the B-25s. At the release point the bombs were dropped and both aircraft escaped with the B-25 upper turret swung around to fire back at the ships. After the rehearsal the B-25 and Beaufighter squadron commanders discussed the results and made necessary adjustments.<sup>94</sup>

Participating crews returned to their bases and briefed their squadron mates on the game plan. The following day, morale was high as the crews waited for the execution message. An entry in the 90th Bomb Squadron's log typified the feelings:

News at night of a 14 ship convoy coming down from Rabaul...are on the north coast of New Britain...all of Port Moresby alerted for this shipping...the 90th working feverishly...guns loaded...bombs aboard...crews listed...silently, but efficiently, the 90th were at their jobs....<sup>95</sup>

### The Convoy is Sighted and the Attacks Commence

On March 1, 1943 at 1500 (New Guinea time), a 90th Bombardment Group (Heavy) Consolidated B-24 Liberator sighted the Lae convoy. Its location was about 100 miles west of Rabaul heading southwest.<sup>96</sup> Throughout the day and night, in very rough weather, heavy bombers shadowed the convoy. The first attack occurred on March 2nd. Still out of range of the A-20s, 26 B-17s and 2 B-24s, in a “quick though apparently not predetermined succession of bombing runs...flying individually and in elements of two and three”<sup>97</sup> carpetbombed the convoy from 4500 to 8000 feet. Escorted by 16 P-38s which engaged an estimated 30 Japanese fighters, several ships were hit and presumably sunk. Although several B-17s received some damage, all returned to base. Reconnaissance aircraft continued to monitor and strike the convoy throughout March 2nd and early March 3rd.

During the morning of March 3rd, the convoy was within range for the mass, coordinated attack. At 0803, the attack order was transmitted:

ENEMY CONVOY CONSISTING OF ONE CRUISER, SIX DESTROYERS, TWO TRANSPORTS, FOUR CARGO APPROACHING NEW GUINEA; PROBABLE DESTINATION LAE LAST REPORTED POSITION LATITUDE 0654S LONGITUDE 14805E, COURSE 270 SPEED 10 TIME 0615/L CONVOY PROTECTED BY ENEMY FIGHTERS DURING DAYLIGHT HOURS...V BOM COM WITH MAXIMUM STRIKING FORCE OF MEDIUM, HEAVY, AND LIGHT BOMBARDMENT SUPPORTED BY P-38'S WILL ATTACK ENEMY CONVOY WHEN IN RANGE OF LIGHT BOMBARDMENT. THE ATTACK WILL BE MADE BY ONE SQUADRON B-17'S (12 AIRPLANES) FOUR SQUADRONS B-25'S ONE SQUADRON BEAUFIGHTERS, ONE SQUADRON A-20'S ESCORTED BY TWO SQUADRONS P-38'S...<sup>98</sup>

Finally, the Fifth Air Force would find out if all the aircraft modifications, tactical innovations, planning, and practice would payoff. The aircraft assembled at their assigned altitudes over Cape Ward Hunt on the north coast of New Guinea. Departing from the rendezvous point at 0930 they headed for the convoy. The first aircraft to strike were the

Beaufighters. Flying line abreast, they evaded the destroyer screen and thoroughly strafed the merchant ships' decks, superstructure and cargo. Racing in just above and behind them came the six unmodified B-25s carrying 500-pound bombs with the 5-second delays.<sup>99</sup>

Next from masthead height, were twelve A-20s, loaded with 500-pound bombs. According to aircrew reports, of the twenty bombs delivered, "they scored ten direct hits and two near misses on seven ships.<sup>100</sup> Minutes later, B-17s dropped their 1000-pound demolition bombs from 6000 to 9000 feet and engaged the estimated 30 enemy fighters.<sup>101</sup> Cueing off the low altitude B-25s, another seven B-25s dropped 35 500-pound instantaneously-fuzed bombs from 3000 to 7000 feet.<sup>102</sup> They were followed minutes later by another six B-25s at medium level dropping 19 bombs. Between the last two medium altitude B-25 attacks came the fleet the Fifth Air Force had worked so hard to develop during the last three months. After sighting the convoy, twelve B-25C-1s, each carrying three or four 500-pound bombs split into three elements. As they approached the convoy, the aircraft peeled off individually and commenced their masthead height attacks.<sup>103</sup> The results were devastating:

The [B-25C-1] pilot...made one run on an undamaged destroyer leader or light cruiser, and flew through considerable heavy A/A. He saw tracers from light A/A just before he opened fire. By tapping the rudders slightly during his approach, he covered the deck of the ship and when he levelled off 300 feet from the ship he received no fire. His co-pilot dropped two 500 pound bombs; one hit short but the other hit the ship just at water level and the explosion rolled it partly over, it righted but sank within a few minutes. He hit a medium sized cargo vessel with another 500 pound bomb after starting a strafing run. The bomb caused a heavy explosion and the ship sank.<sup>104</sup>

B-17s flying at 7000 feet continued their horizontal attacks dropping 1000-pound bombs throughout the hour. By the time the last bomber left the area, according to observations from survivors of the Lae convoy, "every remaining merchant vessel...was damaged in one way or

another.”<sup>105</sup> Throughout the morning and early afternoon individual bombers continued to monitor and attack the floundering vessels.

After returning to their airfields, the aircraft reloaded for the second and final coordinated attack. Rendezvousing at 1400 hours, four B-25s, eight B-25C-1s and three A-20s struck at masthead height; ten B-25s, and five Bostons bombed from medium altitudes (3000 to 6000 feet) and eleven B-17s dropped bombs from 7000 feet.<sup>106</sup> Although interrupted by rough weather along the route the force sighted the convoy, now dispersed and in disarray. With orders to concentrate on the merchant shipping, the crews discovered that few remained. Instead they went after the destroyers “which in fact was to be the principal accomplishment of [the] afternoon's attacks.”<sup>107</sup>

By this time, the water was full of Japanese survivors in “all manner of rafts, life boats, launches, and barges.”<sup>108</sup> Allied aircraft with remaining ammunition strafed them “to efface every possible trace of the convoy so that none of the reinforcements might reach the hard-pressed Japanese on New Guinea—a vital consideration to the Allies.”<sup>109</sup>

#### The Results of the Battle

On the tactical level, the Battle of the Bismarck Sea was a clear rout. The exact number of enemy losses remains unclear to this day. However, most post-war accounts agree that eight transports and four destroyers along with all the division's equipment were sunk, and approximately 2890 out of 8740 ground troops drowned.<sup>110</sup> In the air, 60 aircraft were claimed destroyed with a further 25-39 probably lost. On the Allied side, three P-38s and one B-17 were lost in combat and one B-25 was destroyed in a landing accident. Amazingly, only 14 Allied airmen were killed.<sup>111</sup> The Japanese ground forces at Lae were left without the necessary

reinforcement and any hopes of further drives back down the Papuan Peninsula were dashed forever.

However, the Battle of the Bismarck Sea's greater contribution to the eventual Allied victory was in the affect it had on the senior leadership on both sides in the Southwest Pacific. The utter destruction of the convoy led the Japanese Eighth Area Army at Rabaul to shift its reinforcement of New Guinea through more northern bases in Wewak and Madang.<sup>112</sup> “Japanese reaction to the shock was apparent along his entire chain of command. Not until the Leyte campaign did he again attempt to resupply in force a beleaguered battlefield in range of American medium bombardment.”<sup>113</sup> Though some supplies were eventually transported to Lae via submarine, barge, or small craft, an “air blockade had been established--months in advance of the Allied conquest of Lae.”<sup>114</sup>

To MacArthur and other former SWPA skeptics, airpower had become the weapon of choice for future campaigns. Following the battle MacArthur praised the efforts of his airmen in a letter:

Please extend to all ranks my gratitude and felicitations on the magnificent victory which has been achieved. It cannot fail to go down in history as one of the most complete and annihilating combats of all time. My pride and satisfaction in you all is boundless! signed MacArthur.<sup>115</sup>

Notwithstanding MacArthur's knack for overstatement, the battle's overwhelming success solidified his growing respect for the importance of airpower in the SWPA. Was this just a combination of “enemy ineptitude, and the superior skill of General Kenney and his pilots--together with a fair measure of good luck,” as suggested by the imminent Naval historian, Samuel Eliot Morison?<sup>116</sup> No doubt Japanese failures and luck were present. But many battles have been lost or opportunities wasted when presented a similar opening. Superb leadership, innovation, doctrinal flexibility, and initiative gave Kenney and his crews the chance to

demonstrate their superior skills. March 1943 was a turning point for the Fifth Air Force and in many ways the entire USAAF. The ability of airpower to shape a campaign was no longer an empty promise. In the words of noted historian, Ronald Spector:

Kenney's planes had finally achieved what General Billy Mitchell had so breezily predicted 15 years before. They had destroyed an enemy fleet at sea unaided by naval surface forces. Yet it had required 16 months of war experience, dearly bought air bases, especially designed equipment, painstaking training, good intelligence and fine weather to accomplish it. No matter. The principle was established. Air power was clearly the dominant element in the Southwest Pacific...<sup>117</sup>

## PART II

### The Strategic Situation in 1943

Shortly after the beginning of the Battle of the Bismarck Sea, MacArthur sent Kenney and several other senior members of his staff to Washington for the Pacific Military Conference. Two months earlier, the CASABLANCA Conference had already assigned the capture of Rabaul as the Pacific Theater's strategic objective for 1943. The purpose of this conference, which included representatives from Admiral Halsey's South Pacific Area Command, the US Joint Chiefs of Staff, and their key planners, was to select the exact tactical objectives for operations in the two areas.<sup>118</sup>

After much discussion and significant compromise, the Joint Chiefs of Staff approved a directive on March 28th that included as a second step, "the seizure of the Lae-Salamaua-Finschafen-Madang area of New Guinea.<sup>119</sup> The SWPA strategy as articulated in the newly entitled CARTWHEEL Plan was now becoming familiar: Air attacks to gain air superiority, neutralize hostile airfields, and prevent resupply would precede the planned invasion.<sup>120</sup> For Kenney and Whitehead this meant the enemy aircraft based in New Guinea had to be destroyed.

### The Buildup of Japanese Air Capability

Rabaul remained the center for power of the Japanese Southeast Area. With an unimpeded path to the massive staging area and Combined Fleet Headquarters at Truk, its recapture became the focus of Allied strategic efforts during 1942 and 1943.

Rabaul supported the offensives against the Allied lines of communication, and defensively was a bastion which would help defend the Caroline Islands, the Netherland Indies, and the Philippines against attack from the south. It was one of the most important bases in the semicircular string of island fortresses that

stretched from Burma through the Indies and the Bismarck Archipelago to the Marshall Islands, thence northwest to the Kuriles.<sup>121</sup>

The direction of Japanese operations from Rabaul was a dual, but not joint, effort of the Imperial Japanese Army and Navy. The Eighth Area Army reported directly to Tokyo while the Southeastern Fleet was immediately subordinate to the Combined Fleet at Truk. Army operations in eastern New Guinea were supervised by the Eighteenth Army which by early 1943 was also providing tactical direction to the 6th Air Division. Naval operations were divided between the land-based 11th Air Fleet and the principally administrative Eighth Fleet.<sup>122</sup>

After the painful losses from the Battle of the Bismarck Sea and the subsequent failed I Operation, Japanese Imperial Headquarters was finally convinced to strengthen its air force units in New Guinea. Consequently, on July 27th, the Fourth Air Army was transferred from the Netherland East Indies to Rabaul and in August to Wewak, New Guinea. It would eventually command the 6th and 7th Air Division, and the 14th Air Brigade. Reaching its peak strength of over 500 aircraft and 10,000 personnel shortly after arriving in Wewak, it included 8 fighter groups (air regiments) of 36 planes each; 5 bomber groups of 36 planes each; and 5 reconnaissance squadrons of 12 planes each.<sup>123</sup>

#### Building the Forward Airfield at Tsili Tsili

In order to contribute to the Allied campaign to take Rabaul, the Fifth Air Force needed to secure airfields on the Huon Peninsula. In keeping with the now-established SWPA strategy, neutralization of enemy bases within striking distance of Huon had to come first. From March through July the Fifth Air Force conducted mostly harassment strikes against enemy airfields along New Guinea's northern coast and the shipping between Rabaul and the growing

headquarters at Wewak. Much like earlier efforts, the effectiveness of Allied strikes was greatly hampered by the lack of available aircraft. Further, the Fifth Air Force's premier airfield attack assets--the light and medium bombers--needed an emergency airfield halfway between Port Moresby and Wewak. Of equal importance, such an airfield could also house a fighter group, allowing the P-38s to provide escort for the bombers.

Kenney and Whitehead were already scouting potential locations south of Lae to base their fighters. Flying from fields in southeastern New Guinea, even the twin-engined P-38 lacked the range to provide sufficient air cover for the anticipated ground invasion.<sup>124</sup> Several sites were surveyed and in early June, Tsili Tsili, a small village lying about 60 miles west of Lae was selected. Kenney immediately dispatched an engineering team to carve out an airdrome.

For once the inhospitable New Guinea jungle came in handy. By isolating ground bases it allowed Kenney and his engineers to consider building the airfield so close to the Japanese troops at Lae. But it was still a huge gamble because the Japanese possessed sufficient aircraft based in the Lae area for a potentially devastating air attack if the field was discovered.

### The Deception Plan

To protect their airfield construction work, Kenney and Whitehead devised an ingenious deception operation. Realizing that the Japanese were expecting some sort of activity in preparation for the seizure of Lae, construction was simultaneously begun on an airfield 100 miles northwest of Lae near Bena Bena. This field, in reality no more than a grass strip, was originally intended as an intelligence center and emergency runway. Natives were recruited and despite the dearth of heavy equipment and cargo aircraft, engineers made sure dust was raised, fires started, and grass huts built to picque the interest of the Japanese.<sup>125</sup> True to form, on June

14th, the Japanese began an almost daily bombardment of the strip.<sup>126</sup> By working around the clock, the airfield at Tsili Tsili and accompanying early warning network were completed. On July 26th, the first fighters arrived.<sup>127</sup> Remarkably, the deception effort was still working. The Japanese continued to work over the dummy field at Bena Bena while Tsili Tsili was left unscathed. Kenney and Whitehead's gamble had paid off.

### Probing the Intelligence Network

Throughout the summer of 1943, the Japanese fortified their air units in the Wewak area. The Fifth Air Force carefully monitored the activities using all available intelligence sources. Once again, ULTRA proved particularly useful. In early June, ULTRA intercepts uncovered the 14th Air Regiment's recent deployment to Wewak. Subsequent traffic analysis revealed that more aircraft were on the way.<sup>128</sup>

The Allies intensified their aerial reconnaissance flights. By the middle of August, Kenney and Whitehead could piece together the location and composition of the 6th and 7th Air Division and the 14th Air Brigade. Spread amongst the Fourth Air Army's cluster of airfields at But, Boram, Dagua, and Wewak, the gradual buildup of Japanese aircraft was peaking. On August 13th, 110 bombers and 92 fighters were spotted at the complex.<sup>129</sup>

### Developing the Tactics for Airfield Destruction

By the summer of 1943, Whitehead and his crews were demonstrating proficiency in attacking airfields. Having gained experience by striking bases in the Lae-Salamaua area and along the southern coast of New Britain they were developing a proven technique for success. Using the weapons acquired in the Papuan Campaign, their plan relied on light and medium

bombers to reap the majority of destruction. The technique was broken down into four distinct phases:

1. Intelligence plots the movement of enemy aircraft in order that the attack may be timed for the movement when the heaviest concentration of planes can be hit.
2. Heavy bombers then deliver the initial blow from medium or high altitudes to soften up and tire out the opposition before the medium bombers can attack.
3. Medium bombers (B-25s sometimes aided by A-20s) follow the heavy bombers with a low altitude attack in which the entire airdrome area is strafed and clusters of parachute fragmentation bombs are dropped. To accomplish maximum results from the strafing attacks, the B-25's were modified to carry eight forward firing .50-caliber machine guns.
4. Assessment of results is the fourth and final phase of these coordinated missions. On the basis of careful study both of strike and reconnaissance photos, the number of enemy planes destroyed is carefully tabulated.<sup>130</sup>

Once intelligence provided a suitable target, crews noted fuel and supply depots along with the location of enemy radar sites, AAA positions and ground spotters. Courses of attack were planned to avoid known threats while ensuring destruction of both aircraft and facilities.<sup>131</sup> The timing between the high altitude heavy and low altitude medium bombers was the key. To confuse the enemy, the Fifth Air Force had devised two methods. "The heavy bombers frequently attack during the night preceding a minimum altitude daylight mission. Such attacks often soften up enemy opposition by tiring out the antiaircraft gunners and by keeping the pilots awake during the night."<sup>132</sup> The second option was for heavy bombers to precede the medium bombers by two or three minutes. "This type of attack forces the [Japanese] hand--if he puts his fighters in the air, he risks destruction of them by our fighter escort and if he leaves them on the ground, combined bombing and strafing will destroy them there."<sup>133</sup>

Once again, the bulk of the destruction would be achieved by the medium bombers. Using the experience gained in the earlier modification effort of the 3rd Bomb Group's A-20s, Kenney ordered similar honeycomb racks installed in the B-25s. With the forward section of the

bomb bay filled with fuel, a total of 35 23-pound parafrag bombs could be loaded in the rear bomb bay.

In order to achieve maximum damage, careful coordination between strafing, bombing with parafrag clusters, and 100-pound delayed action bombs was planned. Photos (preferably oblique) were taken of the target airfields and lines to represent the axis of attack were drawn to ensure coverage of the entire runway and dispersal area. Flights in line abreast formation would plan to approach from opposite direction, timing their runs so that one flight was strafing while the other was dropping parafrags. As the opposing flights approached each other they would change altitudes and switch roles. The entire airdrome would be strafed to both cover bombing aircraft and to inflict as much damage on grounded aircraft, installations and personnel as possible.<sup>134</sup> Such an operation required precision flying but by August, Whitehead's crews were more than ready.

#### The Plan is Executed

With the target date to attack Wewak set for August 17th, efforts were further accelerated to supply the airfield at Tsili Tsili. On August 15th, its location was finally discovered and attacked by 20-30 Japanese fighters and 12 bombers. Fifth Air Force fighters rose to meet them and shot down all the enemy bombers but not before one crashed into the recently constructed chapel killing the chaplain and several men. At the time of the attack, twelve Allied transports were in the landing pattern and Japanese Oscar fighters shot down two. On August 16th, 95 Allied transports loaded with 13 55-gallon drums of gasoline each arrived making the airdrome ready to support the next day's effort. Once again Japanese fighters attacked while the transports were arriving but this time no damage was suffered.<sup>135</sup>

For the first strike, Whitehead chose to use heavy bombers at night hoping to catch the Japanese unprepared. Between 2100 and midnight on the 16th, 50 heavy bombers took off from airfields in the Port Moresby area for the three hour flight to the Wewak complex. A total of 48 aircraft reached the four airfields at But, Boram, Dagua, and Wewak and dropped a combination of incendiary, parafrag and demolition bombs.<sup>136</sup>

On August 17th, between the hours 0600 and 0630, 63 B-25s took off from Port Moresby and Dobodura. Due to a combination of bad weather and the inability of ten of the aircraft to release their 300-gallon turret tanks (a mandatory abort item by direction of Whitehead), only 32 aircraft reached the target.<sup>137</sup> The B-25s met light resistance indicating that the heavy bombers had achieved their objective of paralyzing the enemy.

Arriving at the target at 0900 the B-25s commenced their attacks. The results were no less than spectacular. Three B-25s from the 405th Bombardment Squadron reached Dagua and initiated their runs from 30-50 feet. The pilot report stated:

40-50 Dinahs, type 100 Helens and type 97 Sallys inadequately dispersed in twos and threes in clearing along Southeast side of runway were bombed and strafed...Of these enemy planes 8 were reported definitely destroyed and 20 probably destroyed.<sup>138</sup>

The 3rd Bomb Group's three squadrons also struck gold. The 90th Bomb Squadron claimed 15 aircraft destroyed at Wewak; the 8th claimed 40-60 destroyed at Boram; and the 13th claimed an additional 10 to 20 at Boram.<sup>139</sup> The extremely high tally at Boram was due to a combination of superb airmanship and once again, inadequate dispersion by the Japanese. An entry in the 3rd Bomb Group Combat Log summarized the attack and showed the degree of complete surprise achieved:

Boram, the principle target, was the first to be hit. The formation of 8th and 13th Squadron ships, led by Colonel Donald P. Hall, came around the ridge onto the target and took the Nips completely by surprise. Over 100 Japanese aircraft were

lined up wing tip to wing tip; trucks were moving and personnel were busily at work. Col. Hall made the first pass from 100 feet and his initial burst exploded a Betty bomber. Our planes which followed bombed and strafed aircraft at the strip. When they turned for another pass the parked planes resembled a powder train as fire and smoke swiftly moved down the line. Crews of numerous ships observed frag bombs exploding in and around parked aircraft. They also saw an ammunition dump explode and two fuel dumps catch fire. The field was left in shambles; pieces of aircraft scattered allover the area.<sup>140</sup>

The following day Whitehead resumed the effort. In an attempt to confuse the enemy he scheduled the heavy bombers to stirke just before the B-25s arrived. Poor weather enroute caused 23 of the 49 heavy bombers to turn back.<sup>141</sup> Those that reached the target stayed high to avoid the AAA and managed to drop a combination of demolition bombs with instantaneous fuzes and wire-wrapped bombs with extension fuzes.<sup>142</sup>

Moments after impact, 53 B-25s approached the complex. Once again, the medium bombers accounted for the majority of the damage. They concentrated on the airfields at But and Dagua along with supply dumps at Boram and shipping in the Wewak Harbor.<sup>143</sup> The attacks against But and Dagua were particularly devastating. Despite constant harassment by Japanese fighters, B-25s crews claimed a total of 78 aircraft destroyed on the ground and in the air. Additionally, three 1500-ton vessels and several barges were struck.<sup>144</sup> By the end of the day, of the estimated 225 enemy aircraft in the Wewak area, all but ten were left destroyed or unserviceable.<sup>145</sup>

The weather forecast for August 19th precluded another day of strikes which allowed Whitehead to release his bomber crews for maintenance and rest. During the first two days, the lack of ramp space at Tsili Tsili as a result of the flurry of Fifth Air Force fighter operations prevented the transport aircraft from landing. During the “down day” on the 19th, Whitehead used his cargo aircraft to replenish the fuel stocks at the forward airfield.<sup>146</sup>

August 20th was a heavy bomber day as 24 B-24s with fighter escorts bombed Boram at midday destroying several aircraft on the ground and starting large fires around the airdrome. Apparently the Japanese took the opportunity during the previous day's lull to resupply their forces because 30-35 enemy fighters attempted to intercept the heavy bombers. By now the P-38s clearly held the upper hand in aerial combat. Nineteen Japanese fighters were destroyed and six others listed as probable. One B-24 was lost.<sup>147</sup>

Once again, Allied intelligence detected another reinforcement of Japanese aircraft. On the 21st, Whitehead sent the medium bombers one more time. The target for the 18 B-25s was Dagua and But. Escorted by 60 P-38s, the Mitchells bombed and strafed the airfields, "leaving 34 enemy aircraft on the ground destroyed or badly damaged, silencing antiaircraft positions, and destroying one power launch and four barges."<sup>148</sup> Fifty Japanese fighters attempted interception. The B-25s shot down three, one during a strafing pass as the fighter was on takeoff roll and two in the air. The P-38s accounted for another 30 definite and 5 probable.<sup>149</sup>

#### The Results of the Raid

Total damage to the Wewak base complex and its aircraft was immense. As is typical in such a fast moving operation, accurate damage assessment was impossible. Because Fifth Air Force aircraft were timed to arrive over the target simultaneously, the chance of duplicate claims was high. The majority of weapons dropped by B-25s were relatively light parafrag bombs, which though highly effective in rendering the aircraft permanently unserviceable, often left them at least partially intact for subsequent aircraft to strike. Nonetheless, the ability of the Japanese to launch an attack from New Guinea against Allied ground forces was largely negated. In his daily correspondence with Kenney, Whitehead summarized his feelings:

We are highly pleased with this week's operations. According to our box score, our fighters shot down 71 enemy fighters and 12 enemy bombers definite, and 12 more fighters probable. We definitely lost 7 fighters and 2 others are missing. Our bombers certainly destroyed at least 150 enemy airplanes on the ground, shot down 26 enemy fighters definite and 11 more probable. We lost 3 B-24s and 2 B-25s as a result of combat.<sup>150</sup>

MacArthur was equally elated and after the second day's attack released a statement that was carried by the New York Times. "It was a crippling blow at an opportune moment...Numerically, the opposing forces were about equal in strength, but one was in the air and the other not. Nothing is so helpless as a plane on the ground."<sup>151</sup>

When questioned after the war, Major General Tanikawa of the Fourth Air Army confirmed the scale of devastation delivered to the Japanese air capability in New Guinea on the first two days of the attack:

We lost 100 planes including light bombers, fighters and reconnaissance planes. It was a decisive Allied victory. We were planning to retain the balance of power and were making plans to bomb Port Moresby and other areas. A few days before our projected plan was to [materialize], we were bombed at Wewak and our air power was severely crippled. Consequently our air power was rapidly diminishing and was unable to aid our ground forces effectively which, in the end, constituted one of our chief reasons for losing the war.<sup>152</sup>

For MacArthur and the men of the SWPA the real payoff of the raid came two weeks later during the beginning of offensive operations along the Huon Peninsula. Confident the Fifth Air Force had achieved air superiority, "a much bolder plan could be ventured."<sup>153</sup> At sunrise on September 4th, the Australian 9th Division landed 20 miles east of Lae. Japanese aircraft launched from Rabaul could offer only light resistance and were met by Allied fighters. Complete command of the air allowed MacArthur to drop a parachute regiment to seize the airstrip at Nadzab located 20 miles northwest of Lae. The next day the Australian 7th Division was airlifted into the captured airstrip. On September 16th, Allied forces entered Lae and captured it unopposed.<sup>154</sup> By mid-October the Huon Peninsula was secured.

## Conclusion

The use of Fifth Air Force light and medium bombers during the Battle of the Bismarck Sea and the Wewak Raid highlight two important factors in the command's success--doctrinal flexibility and extraordinary innovation. The two are not unrelated. As previously stated, during the interwar years the US Army Air Corps was wedded to the doctrine of high altitude, daylight, precision bombing aimed at the industrial and economic structure of the enemy. Especially after 1944, this independent role of airpower proved highly effective. B-17s and B-24s flown from England and B-29s from the Marianas greatly contributed to the ultimate defeat of the Axis powers. But during the first two years of the war in the SWPA, aircraft range limitations coupled with the Europe-first policy prevented a role for strategic airpower. It was up to the two men in charge--Kenney and Whitehead--to quickly and forcefully shift the role of airpower and construct a doctrine better suited for the task at hand. This they were able to do despite not only the hardships of the SWPA, but while they were asked to carry the brunt of the combat load. Twenty years ago, Michael Howard commented on the necessity of doctrinal flexibility:

I am tempted indeed to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives.<sup>155</sup>

The fact that Kenney was a long-time proponent of attack aviation and that Whitehead spent the bulk of his operational career in fighters must have made the transition away from strategic airpower easier. But the second step--finding the appropriate weapons to match the new doctrine--was accomplished primarily by instilling a spirit of innovation throughout the command.

The initial A-20 and B-25 modifications were accomplished at the squadron level. Kenney and Whitehead facilitated them by encouraging these efforts. This may seem obvious

but combat innovations are not without cost. Their benefits must always be weighed against the inherent loss in production capability and down time. Kenney and Whitehead, both having distinguished themselves as engineering students, were able to manipulate and flex their assembly lines and implement the changes while simultaneously shifting to the offensive.

Innovation was also apparent in the way Kenney and Whitehead crafted the role of airpower in their theater. Prevented from using airpower in a strategic role, they resisted the urge to become an adjunct to the ground war. Instead, airpower was used in a “complementary” role.<sup>156</sup> During the Buna Campaign, Fifth Air Force bombers, fighters, and troop transports flew thousands of sorties in direct support of ground operations. But as described in this paper, those ground and sea arms also supported the main force--airpower, with the latter providing the bulk of the firepower and maneuver.<sup>157</sup>

Kenney and Whitehead understood that when the limited airpower resources were detached from the ground campaign, they could achieve a far greater effect for the theater. The Battle of the Bismarck Sea was an air campaign that supported the theater objective of delaying an enemy buildup in New Guinea. No Allied land operations were planned in conjunction with the attack. Indeed, Allied land forces were still recovering from the exhausting Papuan Campaign. Land operations were planned in conjunction with the Wewak Raid but two weeks afterwards and in an area well to the south. By detaching air campaigns from the ground effort, Kenney and Whitehead elevated airpower to a position of “greatest among equals” in the SWPA. MacArthur affirmed the preeminence of the Fifth Air Force when he declared “the purpose of his surface operations was to advance his bomb line.”<sup>158</sup>

Finally, Kenney and Whitehead's understanding of the operational art placed them in rare company.<sup>159</sup> For airpower to wield its greatest impact it had to accomplish more than simply

bomb airfields, shoot down aircraft, or sink ships--it had to change the enemy's behavior. When the opportunity for decisive victory presented itself, Kenney and Whitehead diverted all available resources to the task. Once the enemy had been bloodied, they refused to let up, instead seeking complete annihilation. The Battle of the Bismarck Sea and the Wewak Raid were not just one-sided statistical triumphs. Both occurred at a time most opportune for the Allies and least for the Japanese. They were combat victories of theater level importance that produced affects felt by each arm of the SWPA.

The war in the Pacific was far from over. Many bitter combined air, naval, and ground campaigns lay ahead. But in the first two years of combat, the light and medium bombers of the Fifth Air Force had set the standard of excellence that few others would achieve.

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